WHAT IS CLAIMED IS:

1. A method for the manufacture of fiber-reinforced plastic compositions using a plasticizing extruder, comprising the steps of:

providing a plasticizing extruder including tandem extruder shafts, screw cylinders, and an infeed opening having a feed slot, one of the extruder shafts being a feed shaft, the screw cylinders having cylinder bores of enlarged diameter and reduced diameter;

feeding endless fiber fleeces or fiber mats with a fluid plastic film to the infeed opening, wherein the fiber fleeces or fiber mats have a width that is approximately the same as the width of the feed slot;

pressing the fiber fleeces or fiber mats into the fluid plastic film;

wetting or impregnating the fiber fleeces or fiber mats with the fluid plastic film within a feed and impregnation section of the plasticizing extruder, wherein the fiber fleeces or fiber mats are introduced into grooves and onto lands of the feed shaft after looping around in the area of the screw cylinders having the enlarged diameter;

carrying the impregnated fiber fleeces or fiber mats from the feed and impregnation section through the area of the screw cylinders having the reduced diameter; and

discharging a further processable, fiber-reinforced plastic composition.

2. The method according to claim 1, wherein endless fiber fleeces or fiber mats are fed together with the fluid plastic in the form of a web with a width approximately equal to the width of the feed slot into the infeed opening, and wherein the fiber fleeces or fiber mats, after looping around in the area of the screw cylinders with the enlarged diameter, are forced by strippers into the grooves and onto the lands of the feed shaft.

3. The method according to claim 1, wherein endless fiber fleeces or fiber mats in the form of a web with a width approximately equal to the width of the feed slot are fed to the infeed opening together with the fluid plastic, and wherein the fiber fleeces or fiber mats, after looping around in the enlarged section of the cylinders, are forced by strippers into the grooves and onto the lands of the feed shaft and the tandem shaft.

4. The method according to claim 1, wherein the weight per unit area or the weight per meter of the fiber fleece or both weights is continuously weighed before entry in the plasticizing extruder and the percentage fiber content by weight in the fiber-reinforced plastic composition and the fiber-reinforced plastic composition weight are controlled by a rearwardly directed cascade control strategy, a forwardly directed cascade control strategy, or a rearwardly and forwardly directed cascade control strategy.

5. The method according to claim 1, wherein the endless fiber fleeces are made from raw fiber bales and then fed directly to the plasticizing extruder.

6. The method according to claim 1, wherein the ends of the fiber fleece or fiber mat are attached to an endless fiber fleece or fiber mat for feeding into the extruder with a manual or automatic spool/roll change.

7. The method according to claim 1, wherein the fiber fleece is formed by spreading the fibers directly on a conveyor belt and is then fed to the extruder.

8. The method according to claim 1 wherein at least one of the fiber fleece or fiber mat is dried directly within a line before being drawn into the extruder.

9. The method according to claim 1, wherein the fiber fleece or fiber mat is preheated within a production line before it is drawn into the extruder.

10. The method according to claim 1, wherein the fiber fleece web or the fiber mat web additionally serves as a transport web for staple fibers, long fiber granules, granules, recyclate chips or fillers.

11. An apparatus for the manufacture of fiber-reinforced plastic compositions, comprising:

a plastic fusion extruder; and

a plasticizing extruder, including

a housing with two bores of varying diameter and two extruder shafts driven in rotation, one of the extruder shafts being a feed shaft,

a discharge and transport section in the housing,

a feed and impregnation section in the hosing, including a slot-like infeed opening provided in the housing above the feed shaft for the introduction of endless fiber fleeces or fiber mats into at least one of the bores, wherein the infeed opening has a slot length of approximately the width of the fiber fleece or fiber mat and is parallel to the extruder shafts and is approximately tangental to one of the extruder shafts, and wherein the bores have wrap-arounds enlarged by 2-20 mm with respect to a diameter of the bores in the discharge and transport section, and

a discharge nozzle placed over the infeed opening.

12. The apparatus of claim 11, wherein strippers are arranged on the feed shaft.

13. The apparatus of claim 11, wherein strippers are arranged on both extruder shafts.

14. The apparatus of claim 11, wherein the endless fiber fleece or fiber mat is guided in the infeed opening over a rounded entry wall.

15. The apparatus of claim 11, wherein the plasticizing extruder has a diameter reduction downstream from the infeed opening that terminates in a spiral in the direction of rotation.

16. The apparatus of claim 11, wherein a moveable feed-slot jaw is disposed on the infeed opening.

17. The apparatus of claim 16, wherein an oscillating drive is disposed with the feed-slot jaw.

18. The apparatus of claim 16, wherein the feed-slot jaw is thermally insulated from the housing.

19. The apparatus of claim 16, wherein the temperature of the feed-slot jaw can be reduced below the tackiness temperature of the endless fiber fleece or fiber mat.

20. The apparatus of claim 11, wherein strippers are provided in the infeed opening.

21. The apparatus of claim 20, wherein the strippers are exchangeable.

22. The apparatus of claim 20, wherein the distance between the strippers and the shafts is smaller than the distance between the enlarged housing bores and the shafts.

23. The apparatus of claim 11, wherein the endless fiber fleece or fiber mat running to the plasticizing extruder is heated.